

CLAIMS

1. A pulse modulation power converter comprising:
a forward path including a forward block (15, 30), a switching stage (11) for
5 amplifying an output from the forward block, and an output filter (12) for low pass
filtering an output signal from the switching stage,
a global feedback path (13), connected to the low pass filtered output signal,
comprising a global feedback block (18, 19) for generating a feedback signal,
means (14) for subtracting said feedback signal from an input signal, and
10 feeding the result to said forward path,
characterized in that said global feedback block (18, 19) and/or
forward block (15, 20) includes:
means for compensating at least a portion of a phase lag of said output filter,
and
15 means for obtaining a 180 degrees phase lag at a switching frequency,
thereby achieving conditions for a controlled oscillation at said switching
frequency.
2. A converter according to claim 1, wherein said compensation means
20 include at least N-1 zeroes placed near the output filter cut-off frequency, where N is
equal to the order of the output filter.
3. A converter according to claim 2, wherein said compensation means
include at least one zero placed at a higher frequency than the output filter cut-off
25 frequency.
4. A converter according to claim 1 - 3, wherein said means for obtaining
a 180 degrees phase lag at the switching frequency comprises at least one high
frequency pole.
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5. A converter according to claim 1 - 4, wherein said means for obtaining
a 180 degrees phase lag at the switching frequency comprises at least one time delay.
6. A converter according to one of the preceding claims, further
35 comprising at least one local feedback path (30) from the output of the switching
power stage to at least one summation point in the forward path, said local feedback
path (30) comprising a local feedback block (31).

7. A converter according to claim 6, wherein said compensation means include at least one pole near the output filter cut-off frequency placed in the local feedback block (31).

5 8. A converter according to any of the preceding claims, further comprising at least one additional global feedback path (52, 55), connected to the output signal of the output filter (12) and to a summing point (53, 56) preceding the forward block (15).

10 9. A converter according to any of the preceding claims implemented in a power conversion system such as AC-DC, DC-AC, DC-DC or any combination of the above mentioned, especially DC-AC converters for audio use and transmission line drivers.